Ministry of the Environment
Ontario

M.O.E. Policy Manual

POLICY TITLE CREMATORIA	NO. 01-05-01

Legislative Authority

The Environmental Protection Act
Regulation 308

Statement of Principles

This policy is designed to reduce contaminant emissions from crematoria by properly controlling the combustion process and thereby contribute to the protection of the environment. The policy establishes design and operating guidelines for application to new incinerators that burn human remains.

Incinerators which meet the requirements of this policy and its associated guideline will achieve high combustion efficiencies and thereby minimize the emission of organic compounds.

This policy deals with the Approval of Cremator designs where the application states that caskets fabricated from potentially hazardous materials including chlorinated plastics, fibre reinforced plastics and impregnated cardboard will not be incinerated.

This policy refers primarily to the combustion process; additional emission controls may also be required. Where potentially hazardous materials are incinerated, air pollution controls will be required as per Policy 01-03.

Point of Contact

Director, Approvals Branch

Effective Date

January 23, 1989

1.0 Incineration Temperature

Crematoria shall be designed for a minimum of at least 1,100°C, and shall operate at a destruction temperature of not less than 1,000°C in the secondary chamber and 800°C in the primary chamber.

2.0 Residence Time

Crematoria incinerators shall be designed for a combustion gas residence time of not less than one second at 1,000°C. This residence time is to be calculated from the point where most of the combustion has been completed and the incineration temperature fully developed. This residence time is normally calculated from the secondary burner(s) flame front. If secondary air is introduced downstream of the burner flame front, residence time should be calculated from the final secondary air injection point(s).

3.0 Oxygen Availability

Crematoria shall be designed to provide and shall operate at not less than 6% residual oxygen in the flue gas exhaust during the incineration cycle.

4.0 Turbulence and Mixing

Crematoria shall be designed to provide a high degree of gas phase turbulence and mixing in the secondary combustion zone. Provisions shall include any combination of: appropriately located/directed air jets, changes of flue gas flow direction, baffling, and constriction of cross-sectional flue gas area.

5.0 Range of Operation

Crematoria shall be designed to achieve the temperature, residence time, oxygen availability and turbulence requirements of this guideline over the complete expected range of values of the incinerator operating parameters, including:

- feed rate, ultimate analysis, heating value, ash and moisture contents;

- combustion air;
- flue gas flow rates; and
- heat losses.

6.0 Control and Monitoring

6.1 The secondary burner(s) shall be fully modulating with a "hold fire" setting to ensure the presence of a flame in the secondary chamber throughout the entire cycle.

6.2 Crematoria shall be equipped with a temperature recorder/controller to control and record the temperature in both the primary and secondary chamber.

7.0 Guidelines for Crematoria

7.1 Guidelines for the design and operation of crematoria can be found in the MOE publication "Guidance for Incinerator Design and Operation, Volume III, Cremators".